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APPAREIL POUR LA COUPE ET LES SOINS DES CHEVEUX

FRANÇOIS SOLVINTO

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The present invention concerns a device for the cutting of hair and more particularly, a device with the structure of a pair of scissors which enables the simultaneous cutting and care of the hair.

Various devices and accessories are known which are designed for the cutting or care of the hair. The cutting devices most frequently consist of scissors with structures that can be more or less complex, or razors that are activated mechanically or electrically. However, all of these known devices can only be used for cutting hair, whereas the care or treatment must be effected separately.

In addition, it is known that it could be advantageous to care for certain kinds of hair by singeing or by thinning, and more particularly, it is known that certain very old techniques consist of treating hair by singeing with the flame of a candle.

The application for French patent N° 82.13976 describes a device which ensures under adequate conditions of safety and efficiency, both the cutting

of hair and its treatment by the technique of singeing. However, the device described by the above-noted patent application functions by use of the technique of a razor cut, whereas it is at times necessary to have a device that operates using a different cutting technique.

The present invention thus has the objective of providing a device which enables the cutting and singeing of hair using the technique of cutting with a scissors, under excellent conditions of safety and efficiency.

The device for the cutting and care of hair by singeing as per the present invention consists of two shanks articulated against one another about an axis of rotation, based on the structure of a pair of scissors, with one of the shanks serving as a bearing while the other serves as a support upon which is mounted, close to its interior edge, a metallic wire or blade that can be raised to a temperature of approximately 700 to 1000°C, with a length ranging between approximately 3 and 20cm, supported at each of its extremities by two integral support

attachments, as well as a means for ensuring an essentially constant tension of the wire or the blade, regardless of its temperature.

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The structure of the device in the form of a pair of scissors presents the advantage of combining the effect of cutting by singeing with a grasping of hair that is close to that which can ordinarily be obtained by using a traditional pair of scissors. A great of facility of adaptation to, and handling by the user results from this fact.

The metal wire or blade is mounted parallel to the support at the level of its inside edge at a distance that ranges between approximately 0.5mm and 1cm, and preferably between approximately 1 and 3mm, so as to "overarch" the cut-line of the hair upon complete closing of the two shanks, with the support shank coming into contact with the bearing shank.

The wire can consist of any steel or alloy wire with a diameter ranging between 0.1 and 0.8mm and preferably between 0.3 and 0.5mm, with a length ranging between approximately 3 and 20cm. In the case of a metallic

blade, the length is the same, the thickness of the blade ranges between 0.1 and 0.5mm, and its width is preferably approximately 1mm, but could, if necessary, be in the order of a few millimeters.

The blade or the wire is preferably an alloy, for example, a nickel-chrome alloy of the type used in electrical resistors, capable of being quickly brought to incandescence, that is, to a temperature ranging between approximately 700 and 1000°C, and more specifically, between 800 and 900°C, preferably through the action of an electrical current. Regulation of the temperature can be adjusted as a function of the conditions of utilization and the results sought.

The methods used to maintain the wire or blade tension constant regardless of the heating temperature can be provided by the two attachments themselves, with each securing the blade or wire at one extremity, at least one of which is flexible in order to ensure a constant tension in spite of the variations in length due to heating. This result can be obtained simply by creating at least one of the connections in the form

of a metal tongue attached to the support at one extremity, whose flexibility and elasticity ensures the tension of the wire or the blade. Based on one variant, an essentially rigid tongue can be provided that supports one extremity of the blade, mounted on an articulation and attached to a spring.

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As per one advantageous realization of the invention the device consisting of the two inter-articulated shanks, one of which supports the metallic blade or wire, is also equipped with an intermediary bar attached to the support shank from which it can separate at a determined angle under the action of a spring. To ensure a better guidance, it is preferable that the intermediary bar be mobile by rotation about the axis of articulation of the two shanks. In addition, its movement in relation to the support shank can be guided by tongues that engage with sockets set in the support shank. A stop provided on one of the tongues allows for the limiting of the opening of the intermediary bar, under the action of the spring, in relation to the support shank. The angle formed by the intermediary bar and the metallic blade or wire that is integrated in the support shank

in the maximum opening position can advantageously be in the order of approximately 5°, so as to overarch the incandescent blade or wire over its entire length.

In the open position, the intermediary bar is separated from the support shank. On closing, the bar comes into contact with the bearing shank, in the process grasping the lock of hair to be cut, and as the movement continues the bar remains held against the bearing shank while the support shank comes close to coming into contact with the bar in the completely closed position, and the incandescent blade or wire progressively cuts the hair clasped between the intermediary bar and the bearing shank. In this position, the metallic blade or wire is parallel to the bearing shank, at a distance of approximately 0.1 to 1mm, essentially at the level of the plane of contact of the bar and the bearing shank. When the bearing shank is made of an electrically insulating material, it is possible to mount the metallic blade or wire in such a way that it comes into contact with the bearing shank in the closed position.

The intermediary bar presents the double advantage of protecting the metal wire or blade heated to incandescence and of improving the efficiency and precision of the cut by insuring a better clasping of the hair by pinching it against the bearing shank. This intermediary bar is preferably made of metal or metal alloy, or again, of any other material

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offering a resistance that is sufficient for the heat released by the metal wire or blade.

The metal wire or blade is an electrically heated either by means of an alternating current feed from a transformer and a voltage regulator, or from a continuous source of current such as a storage battery or cells. By way of example, in the case of an alloy blade, 8cm in length, 1mm in width and 0.15mm in thickness, the intensity of the current is approximately 7A and the voltage approximately 6V. Naturally, these values can be modified, and notably, the device can be operated at a lower intensity.

The characteristics and advantages of the invention will appear in more detail in the description below in

relation to a preferential and non-limiting method of realization, by referring to the attached drawings which represent:

Figure 1: an elevation of the device according to the invention, consisting of an electrically heated metallic blade and an intermediary bar in the closed position.

Figure 2: an end view of the device of figure 1.

Figure 3: a cross-section following A-A in figure 1.

Figure 4: a cross-section following B-B in figure 1.

Figure 5: a cross-section following C-C in figure 1.

Figure 6: an elevation of the partially open device.

Figure 7: an elevation of the open device.

The device represented in figure 1 has the structure of a pair of scissors with two shanks, one support

shank (1) and one bearing shank (2). To the support shank (1) is attached a stem (3) in the extremity

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of which is a slot in which is housed the extremity of the metallic blade (4) secured by means of screw (5). The other extremity of the metallic blade (4) has a cylindrical head (6) hooked to a flexible and elastic metal tongue (7), acting as a spring to keep the blade (4) consistently taut notwithstanding its variation in length due to expansion when heated and contraction when cooling. The metal tongue (7) is itself attached to the support (1) by means of a plate (8).

An intermediary bar (9) articulated about the axis of articulation (10) of the two shanks (1) and (2) is attached to the support shank (1) in relation to which it can separate following an angle α, β, represented in figures 6 and 7. The movement of the intermediary bar (9) in relation to the support shank (1) is guided by two tongues (11) engaging in corresponding grooves provided in the support (1). A coil spring (12) housed in a hollow space in the support shank (1), separates the bar (9) from the support (1) up to the maximum

position corresponding to angleα, determined by a stop located in one of the tongues (11).

As figures 3 and 4 show, when the devices in the closed position, the intermediary bar (9) is butted up against the bearing shank (2) by the support shank (1). The guide tongues (11) of the intermediary bar (9) are then fully engaged in the grooves in the support shank (1), closed by a cover plate (13) as shown in figure 1.

When the two shanks (1) and (2) are separated as shown in figure 6, the intermediary bar (9) progressively separates from the support shank (1) by the action of spring (12), up to an opening limit position corresponding to angle α as indicated above.

When the two shanks (1) and (2) of the device are separated further from one another, the intermediary bar (9) separates in turn from the bearing shank (2). When the device is closed, the support shank (1) and the intermediary bar (9) come closer to the bearing shank (2) until the bar (9) comes into contact with

it, while grasping the lock of hair to be cut, and with the closing movement continuing, the support shank (1) and the metallic bar (4) heated to incandescence approaches the bearing shank (2) until it occupies the position represented by figure (1), thus progressively cutting the lock of hair in the process.

In the closed position as shown in figures 3 and 4, the incandescent metallic blade (4) is parallel to the bearing shank (2) at a distance from it in the order of approximately 0.3mm, essentially beyond the level of the plane of contact of the bearing shank (2) and the intermediary bar (9).

The electrical supply cord (14) for the metallic blade (4) has two wires attached respectively to the stem (3) and the plate (8) ensuring contact with the metallic blade (4). The base of the stem (3) is mounted on an electrically insulated plate (15). A protector (16) provides a covering and masking of the electrical wires and all the elements mounted on the

support shank (1).

The electrical supply cord (14) can be connected to the grid (alternating current) by means of a transformer and a voltage regulator, or to batteries or cells.

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C L A I M S

1. Device for the cutting and care of hair by singeing characterized in that it consists of two shanks inter-articulated about an axis of rotation based upon the structure of a pair of scissors, with one of the shanks serving as a bearing while the other serves as a support upon which is mounted near its interior edge a metallic wire or blade that can be brought to a temperature of approximately 700 to 1000°C, of a length ranging between approximately 3 to 20cm, supported at each of its extremities by two integral support attachments, as well as means for ensuring an essentially constant tension of the wire or blade regardless of its temperature.

2. Device according to claim 1, characterized in that the metallic blade or wire is mounted parallel to the support, at the level of its interior edge, at a distance from it ranging between approximately 0.5mm and 1cm.

3. Device according to one or other of claims 1 and 2, characterized in that it has an intermediary bar attached to the support shank from which it can separate following a determined angle under the action of a spring, to overarch the metallic blade or wire.

4. Device according to claim 3 characterized in that the intermediary bar is mobile by rotation about the axis of articulation of the two shanks.

5. Device according to claim 1 characterized in that at least one of the metallic blade or wire attachments consists of a flexible and elastic tongue ensuring a metallic blade or wire tension that is essentially constant.

6. Device according to claim 1 characterized in that it has a metallic blade with a width equal to

approximately 1mm and a thickness ranging between 0.1 and 0.5mm.

7. Device according to one or other of the preceding claims characterized in that the metal wire or blade is heated by an electrical feed.

Fig.1

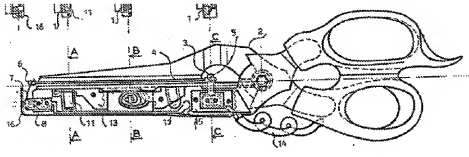

Fig.2

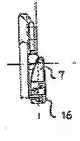

Fig.3

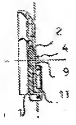

Fig.4

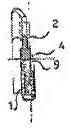

Fig.5

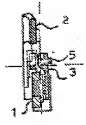

Fig.6

FIG. 6

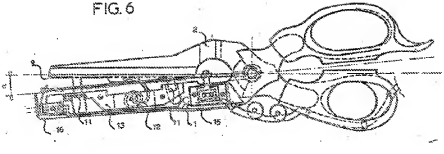

Fig.7